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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/873,449

06/05/2001

John Fan

1020P15418

4407

57035

7590

05/05/2008

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EXAMINER

ZEWDU, MELESS NMN

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

05/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/873,449	<b>Applicant(s)</b> FAN, JOHN	
	<b>Examiner</b> Meless N. Zewdu	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 12, 17-19, 21, 22, 31, 32, 36-38 and 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 16, 20, 26, 30, 35 and 39 is/are rejected.
- 7) ☒ Claim(s) 13-15, 23-25, 27-29 and 33-34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the communication filed on 2/8/08.
2. Claims 12, 17-19, 21-22, 31-32, 36-38 and 40-45 were previously withdrawn by applicant.
3. Claims 1-11, 13—16, 20, 23-30, 33-35 and 49 are pending in this action.

### ***Allowable Subject Matter***

The indicated allowability of claims 1, 20 and 30 is withdrawn in view of Andrews et al's reference, (US 6,646,615 B2). Although this reference was considered before, upon a closer inspection and study of the reference, examiner determined that the perceived difference does not exist and the reference is valid to the claims in question. While examiner regrets this backward tracking, the action has been necessitated in the interest of the patent system.

### ***Claim Objections***

Claim 11 objected to because of the following informalities: for more clarity, examiner suggests inserting "selected" between "transmitting" and "data", on line 3 and inserting "from the mobile communication device" between signals and to, on line 9; and

reinserting "the" next to receiver, on line 9. Also, "a multiple access protocol" on line 11, should be --- the multiple access protocol. Appropriate correction is required.

Claim 20 is objected to because of the following informalities: "the data" on line 8 should be "the prepared data". Appropriate correction is required.

Claim 20 is objected to because of the following informalities: "a receiver" on line 9 should be --- to a receiver in the configured base transceiver station. It needs to be done so because it is not clear if the "a receiver" is a different receiver or part of the base transceiver station. Appropriate correction is required.

Claim 30 is objected to because of the following informalities: "responsive to a wireless communication channel" (line 4) should be --- responsive to a received wireless communication channel. Furthermore, "have" on line 5 should be "has" and "spatial streams from" (line 6) should be --- spatial streams of channels from. Appropriate correction is required.

Claim 30 is objected to because of the following informalities: on line 12, the phrase, "recover data transmitted therethrough" should be modified into – recover the selected data streams transmitted on the assigned channel of the multiple access protocol. Appropriate correction is required.

Claim 39 is objected to because of the following informalities: "to generate" (line 11) should be – to recover. Because, the phrase "to generate", implies a transmission, which is not the case in claim 39. In addition, "received wireless communication channel" on lines 11-12 should be modified into -- received scattered wireless

communication channel. Still further, "receiving a wireless communication channel" on line 6, should be --- receiving a scattered wireless communication channel.

***Claim Rejections - 35 USC § 112***

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instance, it is not clear whether the mobile communication device or the corresponding mobile communication device, that is communicating with the base station. If it is the corresponding mobile communication device (which is different from the mobile device), it would constitute a new matter since the specification does not support the corresponding mobile device. It is to be noted that the two terminologies refer to two different devices. Particularly in a wireless LAN environment, a corresponding mobile communication device refers to another or (foreign) mobile communication device with which a home network mobile device makes connection via its home agent. Furthermore, claim 1 is rejected because it is not clear whether the transmitter is the configured base station (as defined in lines 3-5) or a transmitter (which could be another transmitter) as defined in lines 6-7). Furthermore, it is also not clear whether the "an assigned channel" (line 5), the "a communication channel" (lines 7-8) and the "received communication channel" (line 12) are different channels or one and the same. Because these features are recited in a discrete

manner, examiner does not see a clear functional flow. For these reasons, claim 1, as it stands is vague and/or indefinite.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instance, it is not clear whether the "a mobile communication device" (line 1) and the "a corresponding mobile communication device" (line 3) are different of one and the same. For reasons further stated regarding claim 1 above, claim 20 is vague and/or indefinite. In a similar manner, it is not what the relationship between the "an assigned channel" (line 4) and "the wireless communication channel" (line 11).

Claim 30 recites the limitation "the assigned channel" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 30 it is not clear if the "a receiver" on line 11 is one of the mobile communication device or not. Thus, claim 30 is indefinite.

Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As described above, regarding claim 1, the relationship between the "a corresponding mobile communication device" (line 3) and "the mobile communication device" (line 6) is unclear. Thus, claim 39 is held as being vague and/or indefinite.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11, 16, 20, 26, 30 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Andrews et al. (Andrews) (US 6,646,615 B2).

**As per claim 1:** Andrews discloses a method for increasing channel diversity in a mobile communications device (see abstract), the method comprising:

generating control signals to configure a base transceiver station to transmit selected data streams to a corresponding unit mobile communications device on an assigned channel of a multiple access protocol (see abstract; col. 8, lines 35-57; claim 12) ;and

receiving one or more select data stream(s) associated with a communication channel from a transmitter at the mobile communication device (see figs. 3 and 4; claim 1) through a plurality (N) of electric dipole antennae and a plurality (M) of magnetic dipole antennae (see col. 3, line 62-col. 4, line 26), each of said antennae characterized by a distinct polarization with respect to another (see col. 4, line 63-col. 5, line 13), said electric dipole antennae and magnetic dipole antennae co-located in a common

antennae structure at the mobile communications device to provide at least  $N+M$  uncorrelated spatial streams of channel diversity of the received communication channel to a receiver within the mobile communications device (see figs. 1-2 and 4; abstract; col. 2, lines 37-63). It is to be noted that both the electric and magnetic dipole antennae are configured within the mobile terminal of fig. 3. The transmitter 90 and receiver 95 (transceiver) are the corresponding transmitter 10 and receiver 15 of fig. 1.

**As per claim 2:** Andrews discloses a method, wherein each electric dipole antennae has a different polarization (see abstract; col. 2, lines 28-48).

**As per claim 3:** Andrews discloses a method, wherein each magnetic dipole antenna has a different polarization (see abstract; col. 2, lines 28-48).

**As per claim 4:** Andrews discloses a method, wherein the electric dipole antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae (see abstract; col. 2, lines 28-48; col. 9, lines 5-28).

**As per claim 5:** Andrews discloses a method, wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations (see abstract; col. 2, lines 28-48).

**As per claim 6:** Andrews discloses a method, wherein the data streams are transmitted via a scattering channel (see fig. 4; col. 2, lines 28-48).

**As per claim 7:** Andrews discloses a method, wherein the mobile communications device comprises a palm sized device.(see col. 9, lines 19-28).

**As per claim 8:** Andrews discloses a method, wherein the electric dipole



antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae (see abstract; col. 2, lines 28-48; col. 9, lines 5-28).

**As per claim 9:** Andrews discloses a method, wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations (see abstract; col. 2, lines 28-48; col. 9, lines 5-28).

**As per claim 10:** Andrews discloses a method, wherein the data streams are transmitted via a scattering channel (see fig. 4; col. 2, lines 28-48).

**As per claim 11:** Andrews discloses a method for transmitting data from a mobile communications device (see figs. 3 and 4; claim 7; col. 9, lines 5-28). Except claim 11 is directed to a transmitter for transmitting data streams, the features of claim 11 are, in all respects, similar to the features of claim 1. Hence, claim 11 is rejected on the same ground as claim 1.

**As per claim 16:** the feature of claim 16 is similar to the feature of claim 7. Hence, claim 16 is rejected on the same ground as claim 7.

**As per claim 20:** the features of claim 20 are similar to the features of claim 1. Hence, claim 20 is rejected on the same ground and reasoning as provided in claim 11.

**As per claim 26:** the feature of claim 26 is similar to the feature of claim 7. Hence, claim 26 is rejected on the same ground as claim 7.

**As per claim 30:** the features of claim 30 are similar to the features of claim 1, except claim 30 is directed to an apparatus that is required/intended to perform the steps of claim 1. Hence, since the steps of claim 1 are disclosed and the apparatus of

claim 30 is required by the method of claim 1, claim 30 is rejected on the same ground as claim 1.

**As per claim 35:** the feature of claim 35 is similar to the feature of claim 7.  
Hence, claim 35 is rejected on the same ground as claim 7.

### ***Allowable Subject Matter***

Claim 39 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 13-15, 23-25, 27-29 and 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note: the indicated allowability of claims 14-15, 24-25, 28-29 and 34 is because of the dependency of these claims on respectively claims 13, 23 and 33.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-11, 16, 20, 26, 30 and 35 have been considered but are moot in view of the new ground(s) of rejection. In the preceding Office Action, examiner has made an obviousness rejection, Andrews et al. in view of Airy et al. (Airy) (US 6,400,699 B1), the latter to teach --- transmitting data streams on an assigned channel and generating control signals to configure a base station to

Art Unit: 2617

receive selected data streams from the subscriber unit on the assigned channel of a multiple access protocol. Howe a closer inspection of Andrews' reference teaches/discloses the features in questions as indicated below.

1. transmitting data streams on an assigned channel (see claim 14; fig. 4; col. 8, lines 35-41; col. 9, lines 6-28).

2. generating control signals to configure a base station to receive selected data streams from the subscriber unit on the assigned channel of a multiple access protocol (see abstract; col. 4, lines 27-44; col. 5, lines 42-49). Examiner considers the "complementary signal information" (in the abstract) or the "mutual information" (col. 5, lines 42-49) as generated control signals used in the prior art system.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/  
Primary Examiner, Art Unit 2617  
5/5/2008